

## **REMARKS**

Claims 1, 2, 5-11, and 14-28 are currently pending in this application. Claims 18 and 25 are amended. No claims are cancelled or added. No new subject matter has been added.

Applicants thank the Examiner for the courtesy extended to the Applicants' representatives during the personal interview conducted on November 2, 2004. The amendments to the claims and remarks included in this paper are based on the discussion between the Examiner and the Applicants representatives in the personal interview.

In light of the foregoing amendments, and the following remarks, allowance of all the claims pending in the application is respectfully requested.

### ***Rejections Under 35 U.S.C. § 102***

Claims 1, 2, 5-11, and 14-28 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,591,975 to Jack *et al.* ("Jack"). Applicants traverse this rejection because Jack does not disclose all the features of the claimed invention.

#### **Claims 1, 2, 5-11, and 14-17**

Claim 1 recites the feature of determining an occurrence of a predetermined triggering event, and initiating an ambient reading of ambient NO<sub>x</sub> concentration present prior to a vehicle passing by a system for remote emissions sensing, the initiation of the ambient reading being based on the determination of the occurrence of the predetermined triggering event, among other things. Claim 10 recites, among other things, means for determining an occurrence of a predetermined triggering event, and means for initiating an ambient reading of ambient NO<sub>x</sub> concentration present prior to a vehicle passing by the system, the initiation of the ambient reading being based on the determination of the occurrence of the predetermined triggering event by the means for determining.

In a preferred embodiment, a remote emission detector system may initiate an ambient reading of the ambient NO<sub>x</sub> concentration present just prior to each vehicle passing through the system (See the Specification at page 4, lines 20-22). The ambient reading may be initiated by a trigger event that causes the remote emission detector system to take the ambient reading (See the Specification at page 6, lines 3 and 4). The ambient reading may include a plurality of samples at short intervals over a predetermined measurement interval (See the Specification at page 6, lines 3-6).

Jack appears to teach a system that includes continuous chopped detection of clean air in front of a vehicle and an exhaust plume trailing the vehicle (See Jack at column 6, lines 25 and 26; and at column 6 lines 34-39). Jack apparently discloses that upon detection of a vehicle passing through the system, output signals measured in the clean air immediately preceding the vehicle may be saved (See Jack at column 6, lines 35-39). Thus, Jack apparently discloses **storing** previously generated samples triggered by detection of the vehicle. Storing previously generated samples is different from initiating sampling. Therefore, Jack does not disclose determining an occurrence of a predetermined triggering event and initiating an ambient reading of ambient NO<sub>x</sub> concentration present prior to a vehicle passing by a system for remote emissions sensing, the initiation of the ambient reading being based on the determination of the occurrence of the predetermined triggering event. For at least this reason, claims 1 and 10 are not anticipated by Jack.

In light of the foregoing, Applicant respectfully requests the allowance of claims 1 and 10. Further, claims 2, 6-9, 11, and 14-17 each depend from and add additional features to a corresponding one of independent claims 1 and 10. For at least this reason, Applicants respectfully submit that these dependent claims 2, 6-9, 11, and 14-17 are allowable over Jack at least by virtue of their dependency.

#### Claims 18-28

Solely in an effort to expedite prosecution, the claims have been amended to further distinguish these claims over the cited art. More specifically, claim 18 includes the feature of subtracting a baseline intensity from the exhaust plume reading to

compensate for changes in radiation intensity, wherein the baseline intensity is interpolated using a substantially linear region over an absorption dip, among other things. Claim 25 recites, among other things, means for subtracting a baseline radiation intensity from an exhaust plume reading to compensate for changes in an intensity of a source beam of radiation, wherein the baseline intensity is interpolated using a substantially linear region over an absorption dip.

In an exemplary embodiment, changes in an intensity of radiation may account for a shift between absorption signals in a remote emissions sensing system (See the Specification at page 7, line 8-10; and FIG. 2). The changes in intensity may occur for a variety of reasons, such as, shifts in ambient conditions (See the Specification at page 7, lines 11-13). Subtracting a baseline intensity from each signal may compensate for these shifts (See the Specification at page 7, lines 13 and 14). The baseline intensity may be derived, at least in part, from a substantially linear region above an absorption dip (See the Specification at page 7, lines 14-16; and FIG. 2). This may provide measurements of NO<sub>x</sub> with enhanced accuracy (See the Specification at page 7, lines 16-18).

Jack apparently discloses a system that derives a baseline output using a reference signal associated with a spectral channel in which no atmospheric or automotive emission gases absorb (See Jack at col. 6, lines 11-13). The reference signal may be used to compensate for various distortions that may affect the accuracy of the system (See Jack at col. 6, lines 15-21). However, generating a baseline output associated with a reference spectral channel that experiences little or no absorption is different than *interpolating* a baseline intensity from a substantially linear region above an absorption dip. Therefore, Jack is deficient at least for failing to disclose subtracting a baseline intensity from each exhaust plume reading to compensate for changes in radiation intensity, wherein the baseline intensity is interpolated using a substantially linear region over an absorption dip.

In light of the foregoing, Applicant respectfully requests the allowance of claims 18 and 25. Further, claims 19-24 and 26-28 each depend from and add additional

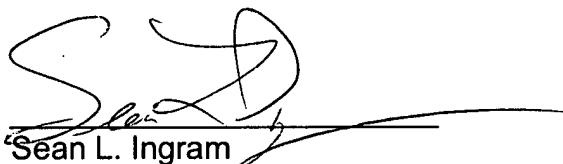
features to a corresponding one of independent claims 18 and 25. For at least this reason, Applicants respectfully submit that these dependent claims 19-24 and 26-28 are allowable over Jack at least by virtue of their dependency.

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the Final Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Dated: November 4, 2004

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Sean L. Ingram', with a long horizontal line extending to the right.

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